

**Amendments to the Claims**

Please cancel claims 18-20 and 24-33 without prejudice or disclaimer.

Please amend claims 21 and 37 as provided below.

Please add new claims 40-47 as presented below.

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Canceled)
2. (Previously Presented) A nucleic acid molecule which is
  - (a) a nucleic acid molecule encoding the polypeptide having the amino acid sequence of SEQ ID NO: 7, wherein the leucine residue at position 513 of SEQ ID NO: 7 is replaced by an aromatic amino acid; or
  - (b) a nucleic acid molecule having the DNA sequence of SEQ ID NO: 17, wherein the codon represented by nnn corresponds to a codon coding for an aromatic amino acid,wherein the nucleic acid molecule functions as a non-desensitizing AMPA-receptor or as a non-desensitizing subunit thereof.

Claims 3-5 (Canceled)

6. (Previously Presented) The nucleic acid molecule of claim 2 which is DNA, RNA or PNA.
7. (Previously Presented) The nucleic acid molecule of claim 2 encoding a fusion protein.
8. (Previously Presented) A vector comprising the nucleic acid molecule of claim 2.
9. (Previously Presented) A vector of claim 8 which is an expression vector, a gene targeting vector or a gene transfer vector.

10. (Previously Presented) An isolated host cell transformed with a vector of claim 8 or comprising the nucleic acid of claim 2.
11. (Previously Presented) The host cell of claim 10 which is a mammalian cell, an amphibian cell, an insect cell, a fungal cell, a plant cell or a bacterial cell.
12. (Original) The host of claim 11, wherein said mammalian cell is a HEK cell.
13. (Original) The host of claim 11, wherein said amphibian cell is an oocyte.
14. (Original) The host of claim 13, wherein said oocyte is a frog oocyte.
15. (Canceled)
16. (Canceled)
17. (Previously Presented) A method for producing a polypeptide encoded by a nucleic acid molecule of claim 2 comprising culturing a host transformed with a vector containing a nucleic acid molecule of claim 2 and isolating the produced polypeptide.
- Claims 18-20 (Canceled).
21. (Currently Amended) A composition comprising a nucleic acid molecule of claim 2, ~~a vector of claim 8, or a polypeptide of claim 18.~~
22. (Previously Presented) The composition of claim 21, further comprising one or more of a pharmaceutically acceptable carrier, a diluent or excipient.
23. (Previously Presented) The composition of claim 21, further comprising suitable means for detection.

Claims 24-36 (Canceled).

37. (Currently Amended) A kit comprising the nucleic acid molecule of claim 2, ~~the vector of claim 8, or the polypeptide of claim 18.~~

38. (Previously Presented) A nucleic acid molecule encoding an AMPA type glutamate receptor subunit that functions as a non-desensitizing AMPA-receptor subunit, wherein a leucine corresponding to the leucine at position 497 of SEQ ID NO: 1 is replaced by an aromatic amino acid in the amino acid sequence of the subunit.

39. (Previously Presented) The nucleic acid molecule of claim 38 which is

(a) a nucleic acid molecule comprising a nucleotide sequence encoding a polypeptide having the amino acid sequence of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, or SEQ ID NO: 10, wherein the leucine residue corresponding to position 497 of SEQ ID NO: 1, 5 or 9, position 504 of SEQ ID NO: 2, 6 or 10, position 507 of SEQ ID NO: 3, position 505 of SEQ ID NO: 4 or 8, or position 513 of SEQ ID NO: 7 is replaced by an aromatic amino acid; or

(b) a nucleic acid molecule comprising a nucleic acid molecule having the nucleotide sequence of SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, SEQ ID NO: 17, SEQ ID NO: 18, SEQ ID NO: 19, or SEQ ID NO: 20, wherein the codon represented by nnn is a codon encoding an aromatic amino acid.

40. (New) A composition comprising a vector of claim 8.

41. (New) The composition of claim 40, further comprising one or more of a pharmaceutically acceptable carrier, a diluent or excipient.

42. (New) The composition of claim 40, further comprising suitable means for detection.

43. (New) A composition comprising a polypeptide of claim 18.

44. (New) The composition of claim 43, further comprising one or more of a pharmaceutically acceptable carrier, a diluent or excipient.

- 45. (New) The composition of claim 43, further comprising suitable means for detection.
- 46. (New) A kit comprising the vector of claim 8.
- 47. (New) A kit comprising the polypeptide of claim 18.